STANDARD OPERATING PROCEDURE

COLLECTING SETTLING SEDIMENT USING A SEDIMENT TRAP

1.0 SCOPE AND APPLICATION

This standard operating procedure (SOP) describes a method for collecting settling sediment – sediment (or similar materials like plankton) temporarily suspended in the water column, but which is slowly settling towards the bottom (bedded) sediments. Settling sediment is usually collected in lentic environments (ponds, lakes, or impoundments), not lotic environments (running streams and rivers). Temporarily suspended sediment in lotic environments is termed bedload sediment.

This SOP can be used to collect settling sediment samples associated with short-term precipitation events or longer-term monitoring.

Note: parts of this SOP are derived from Blomqvist and Kofoed (1981); Cripps and Clarke (1998); Eadie, et al. (1984); Dobson and Mackie (1998); and Larsson et al. (1998).

2.0 METHOD SUMMARY

Sediment traps (described in Section 3) are suspended from buoys and left in a water body until they have collected a sufficient mass of settling sediment. This mass will vary depending on the analyses performed; two grams is usually a minimum.

3.0 PROCEDURE

3.1 Materials and Supplies

Note: Sediment trap efficiency is dependant on the trap's aspect ratio (height:diameter) and the absolute diameter of the opening. The most efficient collectors are relatively tall, narrow cylinders with a height:diameter ratio of ≥ 3 (Blomqvist and Kofoed, 1981).

- Sediment traps; 1-quart (or 1,000-mL) pre-cleaned flint glass jars
- An appropriate harness to hold the traps to the buoy line
- A buoy of sufficient buoyancy to suspend the traps at a consistent water depth
- An anchor of sufficient weight to prevent the buoy and traps from drifting off station
- An appropriate sampling vessel (project-specific)
- Appropriate equipment for establishing station location; a global positioning system (GPS), etc. (project-specific)
- Ice chests

3.2 Procedure